

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Lucien Alfred Couvillon Jr.  
Application No.: Unassigned  
Date Filed: Concurrently Herewith  
Title: UNIVERSAL, PROGRAMMABLE GUIDE CATHETER

INFORMATION DISCLOSURE STATEMENT (IDS)

Mail Stop Patent Application  
Commissioner For Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

SIR:

In accordance with 37 C.F.R. §1.56 and in compliance with 37 C.F.R. §§1.97 and 1.98, the references listed on attached Form PTO/SB/08 and/or subsequently identified herein, are being submitted herewith for consideration by the United States Patent and Trademark Office.

I. COPIES

- a. ☐ A legible copy of (i) each U.S. and foreign patents; (ii) each publication or that portion which caused it to be listed; and (iii) all other information or that portion which caused it to be listed, is included herewith.
- b. ☒ Any patents, publications or other information which are listed on PTO/SB/08 which are not enclosed herewith were previously cited by or submitted to the PTO in one of the following applications which has been relied upon for an earlier filing date under 35 U.S.C. §120:

U.S. Serial Number  
10/176,977

U.S. Filing Date  
06/21/2002

II. CONCISE EXPLANATION OF THE RELEVANCE (check at least one box)

- a. ☒ Except as may be indicated below in (b) of this section, all of the patents, publications or other information are in the English language (concise explanation not required).
- b. ☐ A concise explanation of the relevance of all patents, publications or other information listed that is not in the English language is as follows:
- c. ☐ The following additional information is provided for the Examiner's consideration:

III. ☐ CROSS REFERENCE TO RELATED APPLICATION(S)

The Examiner is advised that the following co-pending application(s) contain(s) subject matter that may be related to the present application. By bringing this (these) applications to the Examiner's attention, Applicant(s) does(do) not waive the confidentiality provisions of 35 U.S.C. §122.

Serial No.

Filing Date

Art Unit

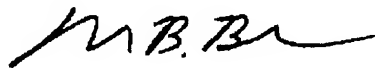
FEEs

- IV. ☒ THIS IDS IS BEING FILED UNDER 37 C.F.R. §1.97(b): (check one box)
- a. ☒ within three months of the filing date of a national application other than a continued prosecution application under § 1.53(d) (37 C.F.R. §1.97(b)(1)). No fee or statement is required.
  - b. ☐ within three months of the date of entry of the national stage as set forth in § 1.491 in an international application (37 C.F.R. §1.97(b)(2)). No fee or statement is required.
  - c. ☐ before the mailing date of a first Office Action on the merits (37 C.F.R. §1.97(b)(3)). No fee or statement is required.
  - d. ☐ before the mailing date of a first Office Action after the filing of a request for continued examination under § 1.114 (37 C.F.R. § 1.97(b)(4)). No fee or statement is required.
- V. ☐ THIS IDS IS BEING FILED UNDER 37 C.F.R. §1.97(c): (check one box)  
before the mailing date of any of a Final Office Action under 37 C.F.R. §1.113, a Notice of Allowance under 37 C.F.R. §1.311, or an action that otherwise closes prosecution in the application (See 37 C.F.R. §1.97(c)).
- a. ☐ No statement; therefore, charge deposit account 50-1047 the fee set forth in 37 C.F.R. §1.17(p).
  - b. ☐ See the statement below. No fee is required.
- VI. ☐ THIS IDS IS BEING FILED UNDER 37 C.F.R. §1.97(d):  
on or before payment of the issue fee and is accompanied by the following:
- 1) a statement under 37 C.F.R. §1.97(e) as provided below; and
  - 2) charge deposit account 50-1047 the petition fee set forth in §1.17(p).
- VII. ☐ STATEMENT UNDER 37 C.F.R. §1.97(e) (check only one box, if applicable)  
The undersigned hereby states that
- a. ☐ each item of information contained in the IDS was cited in a communication from a foreign Patent Office in a counterpart foreign application not more than three months prior to the filing of IDS; or
  - b. ☐ no item of information contained in the IDS was cited in a communication from a foreign Patent Office in a counterpart foreign application, and to knowledge of the person signing the statement after making reasonable inquiry, no item of information contained in the IDS was known to any individual designated in 37 C.F.R. 1.56(c) more than three months prior to the filing of this statement, or
  - c. ☐ some of the items of information contained in the IDS were cited in a communication from a foreign Patent Office. As to this information, the undersigned states that each item of information contained in the IDS was cited in a communication from a foreign Patent Office in a counterpart foreign application not more than three months prior to the filing of this IDS. As to the remaining information, the undersigned hereby states that no item of this remaining information contained in the IDS was cited in a communication from a foreign Patent Office in a counterpart foreign application or, to the knowledge of the person signing the statement after making reasonable inquiry, no item of information contained in the IDS was known to any individual designated in 37 C.F.R. 1.56(c) more than three months prior to the filing of this statement.
- VIII. PAYMENT OF FEES
- ☐ A check in the amount of \_\_\_\_\_ is enclosed for the above-identified fee(s).
  - ☐ Please charge Deposit Account No. 50-1047 in the amount of \$180.00 for the above-indicated fee(s).
  - ☒ If Applicant has overlooked any additional fees, or if any overpayment has been made, the Commissioner is hereby authorized to credit or debit Deposit Account 50-1047.
  - ☐ Two Copies of this paper are attached for Deposit Account charges and debits.

It is Applicant(s)' opinion that the claims presently on file patently distinguish the present invention from each of these references. The above references are being cited only in the interests of candor and without any admission that they constitute statutory prior art or contain matter which anticipates the invention or which would render the same obvious, either singly or in a combination, to a person of ordinary skill in the art.

If the Examiner has any questions concerning this IDS, he/she is requested to contact the undersigned. If it is determined that this IDS has been filed under the wrong rule, the PTO is requested to consider this IDS under the proper rule (with a petition if necessary) and charge the appropriate fee to Deposit Account No. 50-1047.

Respectfully submitted,



David B. Bonham  
Attorney for Applicant(s)  
Reg. No. 34,297  
Tel. 703-433-0510

MAYER FORTKORT & WILLIAMS  
Customer Number 27774

Enclosures: ☒ PTO/SB/08  
☐ References  
☐ Foreign Search Report  
☐ Other:

**Certificate of Mailing By Express Mail**

I hereby certify that this correspondence is being deposited with the United States Postal Service as "Express Mail Post Office to Addressee" service under 37 CFR 1.10 in an envelope addressed to:  
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on 1/5/04.

**Marjorie Scariati**

(Printed name of Person Mailing Correspondence)

  
(Signature)

# INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

Docket Number (Optional)

02-076 C1

Application Number

Unassigned

Applicant(s)

Lucien Alfred Couvillon Jr.

Filing Date

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Group Art Unit

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## U.S. PATENT DOCUMENTS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	1	4,273,111	6/16/81	Tsukaya	128	6	
	2	4,286,585	9/1/81	Ogawa	128	6	
	3	4,499,895	2/29/85	Takayama	128	6	
	4	4,503,842	3/12/85	Takayama	128	4	
	5	4,543,090	9/24/85	McCoy	604	95	
	6	4,601,705	7/22/86	McCoy	604	95	
	7	4,753,223	6/28/88	Bremer	128	4	
	8	4,790,624	12/13/88	Van Hoyer et al.	350	96.26	
	9	4,846,573	7/11/89	Taylor et al.	356	241	
	10	4,884,557	12/5/89	Takehana et al.	128	4	
	11	4,899,731	2/13/90	Takayama et al.	128	4	

## FOREIGN PATENT DOCUMENTS

	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
							YES	NO
	1	WO 01/58973 A2	8/16/01	PCT	C08G		✓	
	2	JP3004830	1/10/91	Japan	A61B1	00	✓	
	3	JP3170125	7/23/91	Japan	A61B1	00	✓	
	4	JP8066351	3/12/96	Japan	A61B1	00	✓	
	5	JP8322783	12/10/96	Japan	A61B1	00	✓	

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	1	Jae-Do Nam, "Electroactive Polymer (EAP) Actuators and Devices for Micro-Robot Systems" 28 November 2000.
	2	"Snake-like Robot Endoscopes", from <a href="http://robby.caltech.edu/~chen/res-medical.html">http://robby.caltech.edu/~chen/res-medical.html</a> , page updated 14 August 1996.

EXAMINER

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EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
12	4,930,494	6/5/90	Takehana et al.	128	4	
13	4,977,886	12/18/90	Takehana et al.	128	4	
14	4,987,314	1/22/91	Gotanda et al.	250	551	
15	5,188,111	2/23/93	Yates et al.	128	657	
16	5,268,082	12/7/93	Oguro et al.	204	282	
17	5,337,732	8/16/94	Grundfest et al.	128	4	
18	5,396,879	3/14/95	Wilk et al.	128	4	
19	5,431,645	7/11/95	Smith et al.	606	1	
20	5,482,029	1/9/96	Sekiguchi et al.	600	109	
21	5,492,131	2/20/96	Galel	128	772	
22	5,556,370	9/17/96	Maynard	600	151	

**FOREIGN PATENT DOCUMENTS**

DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
					YES	NO
6	JP10014863	1/20/98	Japan	A61B1	00	✓
7	ES 2 048 086	1/17/92	Spain	H01B1	12	✓
8	ES 2 062 930	12/28/92	Spain	H01B1	12	✓

**OTHER DOCUMENTS** *(Including Author, Title, Date, Pertinent Pages, Etc.)*

3	Peirs et al., "Miniature Parallel Manipulators for Integration in a Self-propelling Endoscope," IUAP P4/24 IMechS Workshop, 27 October 1999.
4	"Walking machines: 0-legged-robots," compiled by C. Duntgen, 26 August 2000.

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	23	5,624,380	4/29/97	Takayama et al.	600	146	
	24	5,631,040	5/20/97	Takuchi et al.	427	100	
	25	5,645,520	7/8/97	Nakamura et al.	600	151	
	26	5,662,587	9/2/97	Grundfest et al.	600	114	
	27	5,855,565	1/5/99	Bar-Cohen et al.	604	104	
	28	5,857,962	1/12/99	Bracci et al.	600	105	
	29	5,873,817	2/23/99	Kokish et al.	600	143	
	30	5,916,146	6/29/99	Allota et al.	600	141	
	31	6,162,171	12/19/00	Ng et al.	600	141	
	32	5,090,956	2/25/92	McCoy	604	95	
	33	5,906,591	5/25/99	Dario et al.	604	95	

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## **OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)**

	5	Yoseph Bar-Cohen, Ed., Electroactive Polymer (EAP) Actuators as Artificial Muscles, SPIE Press (2001), Chapter 1, pp. 3-44
	6	Yoseph Bar-Cohen, Ed., Electroactive Polymer (EAP) Actuators as Artificial Muscles, SPIE Press (2001), Chapter 7, pp. 193-221.

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	34	6,249,076 B1	6/19/01	Madden et al.	310	363	
	35	5,250,167	10/5/93	Adolf et al.	204	299	
	36	5,389,222	2/14/95	Shahinpoor	204	299.2	
	37	5,556,700	9/17/96	Kaneto et al.	428	332	
	38	5,651,366	7/29/97	Liang et al.	128	662.06	
	39	5,771,902	6/30/98	Lee et al.	128	897	
	40	6,109,852	8/29/00	Shahinpoor et al.	414	1	
	41	5,535,759	7/16/96	Wilk	128	898	
	42	6,117,296	9/12/00	Thomson	204	607	
	43	5,368,015	11/29/94	Wilk	128	4	
	44	5,486,182	1/23/96	Nakao et al.	606	114	

## FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	7	Jeon et al., Smart Structures and Materials 2001: Electroactive Polymer Actuators and Devices, Yoseph Bar-Cohen, Ed., Proceedings of SPIE Vol. 4329 (5-8 March 2001), pp. 380-388.
	8	Cho et al., Smart Structures and Materials 2001: Electroactive Polymer Actuators and Devices, Yoseph Bar-Cohen, Ed., Proceedings of SPIE Vol. 4329 (5-8 March 2001), pp. 466-474.

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9

Kubler et al., "An Endoscopic Navigation System," Proceedings of Medicine Meets Virtual Reality - MMVR 2001, pp. 253-255.

10

Kubler et al., "Endoscopic Robots," Proceedings of 3rd International Conference on Medical Image Computing and Computer-Assisted Intervention - MICCAI 2000, pp. 949-955.

11

Worldwide ElectroActive Polymers (Artificial Muscles) Newsletter, Vol. 3, No. 1 (June 2001).

12

"Smart Catheters," from <http://www.piaggio.cci.unipi.it/cathe.htm>, printed 8/27/01

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"Snake-like Flexible Micro-robot," from [http://www.agip.sciences.univ-metz.fr/~mihalach/Copernicus\\_project\\_engl.html](http://www.agip.sciences.univ-metz.fr/~mihalach/Copernicus_project_engl.html), Project start: 1 May 1995.

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"Robot Snake with Flexible Real-Time Control," from <http://ais.gmd.de/BAR/snake.html>, last updated 01-10-17.

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Jager et al., "Microfabricating Conjugated Polymer Actuators," Science, Vol. 290 (24 November 2000), pp. 1540-1545.

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Electroactive Polymer (EAP) Actuators as Artificial Muscles, Yoseph Bar-Cohen, Ed., SPIE Press (2001), Chapter 16, pp. 457-495.

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Electroactive Polymer (EAP) Actuators as Artificial Muscles, Yoseph Bar-Cohen, Ed., SPIE Press (2001), Chapter 21, pp. 615-659.

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Yoseph Bar Cohen, Smart Structures and Materials 2001: Electroactive Polymer Actuators and Devices, Yoseph Bar-Cohen, Ed., Proceedings of SPIE Vol. 4329 (5-8 March 2001), pp. 1-6.

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Madden et al., Smart Structures and Materials 2001: Electroactive Polymer Actuators and Devices, Yoseph Bar-Cohen, Ed., Proceedings of SPIE Vol. 4329 (5-8 March 2001), pp. 72-83.

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Pelrine et al., Smart Structures and Materials 2001: Electroactive Polymer Actuators and Devices, Yoseph Bar-Cohen, Ed., Proceedings of SPIE Vol. 4329 (5-8 March 2001), pp. 335-349.

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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

21

John David Wyndham Madden, "Conducting Polymer Actuators," Massachusetts Institute of Technology, September 2000.

22

"Viking Optima," from <http://www.guidant.com/products/optima.shtml>, 2002 Guidant Corporation

23

Active Endoscope (ELASTOR, Shape Memory Alloy Robot), <http://mozu.mes.titech.ac.jp/research/medical/endoscope/endoscope.html>, 9 pages including 3 Figures and 4 photographs.

24

Koji Ikuta et al., "Shape Memory Alloy Servo Actuator System With Electric Resistance Feedback And Application For Active Endoscope," IEEE Int'l Conference on Robotics and Automation (Ap25ril 24-29, 1988), pp. 427-430.

25

David L. Brock, "Review of Artificial Muscle based on Contractile Polymers," MIT Artificial Intelligence Laboratory, A.I. Memo No. 1330, November 1991, pages 1-12.

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Group Art Unit  
**3739**

**U.S. PATENT DOCUMENTS**

EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	1.	6,514,237 B1	2/4/2003	Maseda	604	533	
	2.	6,468,203 B2	10/22/2002	Belson	600	146	
	3.	6,071,234	6/6/2000	Takada	600	114	
	4.	5,239,982	8/31/93	Trauthen	128	4	
	5.	5,347,987	9/20/94	Feldstein et al.	128	4	
	6.	5,957,833	9/28/99	Shan	600	117	
	7	6,428,470	8/6/02	Thompson	600	173	
	8	6,547,723	4/15/03	Ouchi	600	146	

**FOREIGN PATENT DOCUMENTS**

REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						YES	NO

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